

HIGH RESOLUTION DYNAMICS LIMB SOUNDER

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2002

Subject/Title: **Verification of non-metallic materials, materials screening, and materials list requirements for HIRDLS Instrument VCRM line-item closure.**

Description/Summary/Contents:

This document contains verification of the following verification requirements matrix (VCRM) requirements from the ITS section 3.12.1: Non-metallic materials outgassing, non-metallic materials screening, materials list. This document states that the functional representation of the completion of the three, itemized, materials VCRM 'lines' is found in the body and attachments of the HIRDLS Materials and Processes List (PA-LOC-0248), which has been accepted by GSFC and released.

Keywords: non-metallic materials, materials screening, materials list

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**Verification of ITS Section 3.12.1, 3.12.1a, and 3.12.1c,
per the HIRDLS VCRM as of 8 April 02.**

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Log of Changes

Rev.	Date	Section	Change Description
N/C	8 April 02	All	Initial release.

1. Summary, Conclusions, and Recommendations

The required sections of the ITS cited in the VCRM as “ITS sections 3.12.1, 3.12.1a, and 3.12.1c”, having to do with non-metallic materials selection, testing and recording are all satisfied by the approved HIRDLS Materials and Processes List PA-LOC-0248 (M&P List). Goddard Space Flight Center Materials Branch concurs with the materials list and each of the Materials Usage Agreements (MUA) shown in the M&P List. No further action is required unless the M&P list requires updating due to as-built changes. If this is required, the list will be updated, approved by GSFC M&P and re-released.

2. Introduction

Table 1 shows the The HIRDLS VCRM materials items which must be met, and reviews to which sections of the ITS the VCRM intends to refer.

Table 1: Quoted VCRM line items which are to be verified by this document

ITS Section Cited	Requirement
ITS 3.12. 1	All nonmetallic materials used in the Instrument shall be shown to meet, as a minimum, the requirements of Total Mass Loss (TML) less than 1.0 percent (sic)
ITS 3.12.1a	All nonmetallic materials used in the Instrument shall be shown to meet, as a minimum, the requirements of Collected Volatile Condensable Material (CVCN) less than 0.1 percent when tested in accordance with ASTM E595 (sic)
ITS 3.12.1c	A complete list of polymeric and organic materials shall be submitted on GSFC forms 18-59A and B, or an equivalent, containing data for TML, CVCN, and the curing or processing time and temperature. (sic)

The HIRDLS M&P list PA-LOC-0248 has been developed to answer the ITS, GIRD, and HIRDLS CCP materials selection requirements, including those for which the overview is shown in in Table 1.

3. Technical Discussion

The verification of the requirements stated in Table 1, the ITS, and the GIRD, can be found in the released document PA-LOC-0248, the HIRDLS M&P List.

4. Reference

1. GSFC 422-11-12-01, General Interface Requirements Document (GIRD) for EOS Common Spacecraft/Instruments, April 1995.
2. HIRDLS Contamination Control Plan, PA-HIR-006
3. HIRDLS Materials and Processes List PA-LOC-0248